

Complete Summary

GUIDELINE TITLE

APIC guideline for handwashing and hand antisepsis in health care settings.

BIBLIOGRAPHIC SOURCE(S)

Association for Professionals in Infection Control and Epidemiology, Inc. APIC guideline for handwashing and hand antisepsis in health care settings. Am J Infect Control 1995 Aug; 23(4):251-69. [239 references] [PubMed](#)

GUIDELINE STATUS

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According to the guideline developer, this updated guideline has been reviewed. This review involved updated literature searches of electronic databases and expert panel review of new evidence that has emerged relative to the recommendations presented in this guideline. The guideline developer asserts that this guideline is current as of Dec 2001.

COMPLETE SUMMARY CONTENT

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SCOPE

DISEASE/CONDITION(S)

Nosocomial infection

GUIDELINE CATEGORY

Prevention

CLINICAL SPECIALTY

Family Practice
Infectious Diseases
Preventive Medicine

INTENDED USERS

Allied Health Personnel
Clinical Laboratory Personnel
Health Care Providers
Hospitals

GUIDELINE OBJECTIVE(S)

- To provide information on skin flora of hands and specific characteristics of selected antimicrobial products available for topical use on hands
- To provide information on hand-washing and surgical scrub techniques, and related aspects of hand care and protection
- To summarize literature regarding the efficacy of selected antimicrobial products
- To provide recommendations for the use of antimicrobial products by surgical personnel for hand scrubbing and by health care personnel for hand-washing and hand antisepsis

TARGET POPULATION

Surgical and health care personnel

INTERVENTIONS AND PRACTICES CONSIDERED

- The use of selected antiseptic products, including alcohols, chlorhexidine gluconate, iodine and iodophors, para-chloro-meta-xyleneol, and triclosan. Note: hexachlorophene is considered but not recommended.
- Hand-washing, hand antisepsis and surgical scrub techniques
- Other aspects of hand care and protection, including glove use; condition of nails; use of lotion; storage and dispensing of hand care products; and behavior and compliance issues

MAJOR OUTCOMES CONSIDERED

- Nosocomial infection rates
- Hand-washing rates and compliance
- Reduction in microbial counts on skin

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

Not stated

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Not stated

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Not applicable

METHODS USED TO ANALYZE THE EVIDENCE

Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not applicable

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Not stated

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

External Peer Review
Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Initial drafts received review by the Association for Professionals in Infection Control and Epidemiology (APIC) Guidelines Committee, key individuals, and professional organizations before publication of the Draft in the Journal, soliciting further comment. All written comments were reviewed by the APIC Guidelines Committee and revisions were made. The Guideline was finalized by the Committee and approved by the APIC Board of Directors.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

- I. Health care personnel hand-washing and hand antisepsis
 - A. Hands must be washed thoroughly with soap and water when visibly soiled.
 - B. Hands must be cared for by hand-washing with soap and water or by hand antisepsis with alcohol-based handrubs (if hands are not visibly soiled):
 1. Before and after patient contact.
 2. After contact with a source of microorganisms (body fluids and substances, mucous membranes, nonintact skin, inanimate objects that are likely to be contaminated.)
 3. After removing gloves.
 - C. Wet hands with running water. Apply hand-washing agent and thoroughly distribute over hands. Vigorously rub hands together for 10 to 15 seconds, covering all surfaces of the hands and fingers.
 - D. For general patient care, a plain, nonantimicrobial soap is recommended in any convenient form (bar, leaflets, liquid, and powder). Such detergent-based products may contain very low concentrations of antimicrobial agents that are used as preservatives to prevent microbial agents contamination. If bar soap is used, small bars that can be changed frequently and soap racks that promote drainage should be used.
 - E. Hand antisepsis, achieved by hand-washing or surgical scrub with antimicrobial containing soaps or detergents or by use of alcohol-based antiseptic handrubs, is recommended in the following instances:
 1. Before the performances of invasive procedures such as surgery or the placement of intra-vascular catheters, indwelling urinary catheters, or other invasive devices.
 2. When persistent antimicrobial activity on the hands is desired.
 3. When it is important to reduce numbers of resident skin flora in addition to transient microorganisms.
 - F. In settings where hand-washing facilities are inadequate or inaccessible and hands are not soiled with dirt or heavily contaminated with blood or other organic material, alcohol-based handrubs are recommended for use. In situations where soilage occurs, detergent-containing towelettes should be used to cleanse the hands; alcohol-based handrubs can then be used to achieve hand antisepsis.
 - G. In the event of interruption of water supply, alternative agents such as detergent-containing towelettes and alcohol-based handrubs should be available.
 - H. Products used for hand-washing, surgical scrubs, and hand care should be chosen by persons knowledgeable about the purpose of use, the advantages and disadvantages, cost, and acceptance of the product by users.
 - I. Routine use of hexachlorophene is not recommended.
- II. Personnel hand preparation for operative procedures
 - A. The procedure for surgical hand scrub should include the following steps:
 1. Wash hands and forearms thoroughly.

2. Clean under nails with a nail cleaner.
 3. Rinse thoroughly.
 4. Apply antimicrobial agent to wet hands and forearm with friction for at least 120 seconds.
 - B. If an alcohol-based preparation is selected for use, wash hands and arms, clean fingernails thoroughly, dry completely, and follow manufacturer's recommendations for application. Generally, application should last for at least 20 seconds.
 - C. Personnel with allergic reactions to antiseptic agents other than alcohol may apply ethanol or isopropanol.
- III. Other aspects of hand care and protection
- A. Glove use
 1. Gloves should be used as an adjunct to, not a substitute for, hand-washing.
 2. Gloves should be used for hand-contaminating activities. Gloves should be removed and hands washed when such activity is completed, when the integrity of the gloves is in doubt, and between patients. Gloves may need to be changed during the care of a single patient, for example when moving from one procedure to another.
 3. Disposable gloves should be used only once and should not be washed for reuse.
 4. Gloves made of other materials should be available for personnel with sensitivity to usual glove material (such as latex).
 - B. Condition of nails and hands
 1. Nails should be short enough to allow the individual to thoroughly clean underneath them and not cause glove tears.
 2. The hands, including the nails and surrounding tissue, should be inflammation free.
 - C. Lotion
 1. Lotion may be used to prevent skin dryness associated with hand-washing.
 2. If used, lotion should be supplied in small, individual-use or pump dispenser containers that are not refilled.
 3. Compatibility between lotion and antiseptic products and the effect of petroleum or other oil emollients on the integrity of gloves should be considered at the time of product selection.
 - D. Storage and dispensing of hand care products
 1. Liquid products should be stored in closed containers.
 2. Disposable containers should be used. If disposable containers cannot be used, routine maintenance schedules for cleaning and refilling should be followed. Reusable containers should be thoroughly washed and dried before refilling.
 3. There should be a routine mechanism to ensure that soap and towel dispensers function properly and are adequately supplied.
 4. Containers of alcohol should be stored in cabinets or areas approved for flammables.
 - E. Drying of hands
 1. Cloth towels, hanging or roll type, are not recommended for use in health care facilities.
 2. Paper towels or hand blowers should be within easy reach of the sink but beyond splash contamination.

3. Lever-operated towel dispensers should be activated before beginning hand-washing. Hand blowers should be activated with the elbow.
- F. Behavior and compliance. Efforts to improve hand-washing practices should be multifaceted and should include continuing education and feedback to staff on behavior or infection surveillance data. Unit clinical and administrative staff should be involved in the planning and implementation of strategies to improve compliance and hand-washing.

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is not specifically stated for each recommendation.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

- Reduced carriage of potential pathogens on the hands
- Reduced patient mortality and/or morbidity from nosocomial infection

POTENTIAL HARMS

Complications of hand-washing and gloving.

- Hand-washing can cause detrimental effects on the skin. Some of these effects occur regardless of the products used; others involve reactions to the ingredients in various hand-washing agents. Antiseptics do not necessarily cause greater damage to skin than plain soap, often it is the detergent base that is harsh. Recently, as glove use has increased, reports of reactions to latex gloves have also increased. Dermatitis in health care personnel may place patients at risk because hand-washing will not decrease bacterial counts on dermatitic skin, and dermatitic skin contains high numbers of microorganisms. Health care personnel with dermatitis may be at increased risk of exposure to blood-borne pathogens during skin contact with blood or body fluids because the integrity of the skin is not present.

Specific agents.

- Alcohol use for skin antisepsis can result in drying and/or skin roughness.
- Chlorhexidine gluconate is nontoxic on skin, and skin absorption is minimal. Ototoxicity can result, however, if instilled directly into the middle ear; corneal damage can occur if instilled into the eye. Contact urticaria syndrome

- leading to anaphylaxis and other allergic manifestations including respiratory symptoms and contact dermatitis have also been reported
- Iodine and, to a lesser extent, the iodophors are characterized by a propensity toward skin irritation and damage, as well as allergic or toxic effects in sensitive persons. Percutaneous and mucous membrane absorption occur, with the possible induction of hypothyroidism in newborn infants.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Staying Healthy

IOM DOMAIN

Effectiveness
Safety

IDENTIFYING INFORMATION AND AVAILABILITY

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ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

1995 Mar (reviewed 2001)

GUIDELINE DEVELOPER(S)

Association for Professionals in Infection Control and Epidemiology, Inc. - Professional Association

SOURCE(S) OF FUNDING

Not stated

GUIDELINE COMMITTEE

Association for Professionals in Infection Control and Epidemiology (APIC)
Guidelines Committee

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Author: Elaine Larson, RN, PhD, FAAN, CIC.

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

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GUIDELINE AVAILABILITY

Electronic copies: Available from the [Association for Professionals in Infection Control and Epidemiology, Inc. Web site](#).

Print copies: Available for purchase from the Association for Professionals in Infection Control and Epidemiology, Inc., 1275 K Street, NW, Suite 1000, Washington, DC 20005-4006. For more information, please see the [Association for Professionals in Infection Control and Epidemiology, Inc. Web site](#).

AVAILABILITY OF COMPANION DOCUMENTS

The following is available:

- Hand-washing: Your Most Powerful Defense Against Infections. Washington, DC: Association for Professionals in Infection Control and Epidemiology, Inc. (Infection Control Brochure for Health Care Professionals).

Print copies: Available from the Association for Professionals in Infection Control and Epidemiology, Inc., 1275 K Street, NW, Suite 1000, Washington, DC 20005-4006. For more information, please see the [Association for Professionals in Infection Control and Epidemiology, Inc. Web site](#).

PATIENT RESOURCES

None available

NGC STATUS

This summary was completed by ECRI on May 2, 2000. The guideline developer was provided with a copy of this NGC summary for review, but to date, NGC has not received any comments from the guideline developer.

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